ļ	CRF Errors Corrected by the STIC Systems Branch CRF Processing Date: 1/29/20 Edited by:
	Changed a file from non-ASCII to ASCIIENTERED Verified by: (STIC s
	Changed the margins in cases where the sequence text was "wrapped" down to the next line.
	Edited a format error in the Current Application Data section, specifically:
	Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the prior application data; or other
	Added the mandatory heading and subheadings for "Current Application Data".
	Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
	Changed the spelling of a mandatory field (the headings or subheadings), specifically:
	Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
	Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
	Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
	Inserted colons after headings/subheadings. Headings edited included:
	Deleted extra, invalid, headings used by an applicant, specifically:
	Deleted: non-ASCII "garbage" at the beginning/end of files; secretary initials/filename at end of file page numbers throughout text; other invalid text, such as
	Inserted mandatory headings, specifically:
	Corrected an obvious error in the response, specifically:
	Edited identifiers where upper case is used but lower case is required, or vice versa.
	Corrected an error in the Number of Sequences field, specifically:
	A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
	Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error ue to a Patentin bug). Sequences corrected:
	Other: Seys 21, 28 - moved bases and amero and one to left

Action. DO NOT send a copy of this form.

3/1/95



DATE: 01/29/2002

OIPE

PATENT APPLICATION: US/09/939,408A TIME: 10:50:20 Input Set : A:\PTO.AMC.txt Output Set: N:\CRF3\01292002\I939408A.raw 3 <110> APPLICANT: Yoshida, Roberta Kootstra, Anna 7 <120> TITLE OF INVENTION: Phenylalanine Ammonia Lyase Polypeptide and 8 Polynucleotide Sequences and Methods of Obtaining and 9 Using Same 11 <130> FILE REFERENCE: 29479/500NSCA 13 <140> CURRENT APPLICATION NUMBER: US 09/939,408A 17 <141> CURRENT FILING DATE: 2001-08-24 19 <150> PRIOR APPLICATION NUMBER: US 09/624,693 22 <151> PRIOR FILING DATE: 2000-07-24 23 <150> PRIOR APPLICATION NUMBER: PCT/US01/23270 26 <151> PRIOR FILING DATE: 2001-07-24 29 <160> NUMBER OF SEQ ID NOS: 30 31 <170> SOFTWARE: PatentIn Ver. 2.0 33 <210> SEQ ID NO: 1 34 <211> LENGTH: 35 35 <212> TYPE: DNA 36 <213> ORGANISM: Artificial Sequence 38 <220> FEATURE: 39 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic 40 primer OLI 61 42 <400> SEQUENCE: 1 gacggatcca ctatggcbcc btcsgtsgac tcgat 35 46 <210> SEQ ID NO: 2 47 <211> LENGTH: 33 48 <212> TYPE: DNA 49 <213> ORGANISM: Artificial Sequence 51 <220> FEATURE: 52 <221> NAME/KEY: modified_base 53 <222> LOCATION: (13) 54 < 223 > OTHER INFORMATION: n = (a or c or g or t/u) or (unknown or other)56 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 58 Primer OLI 63 60 <400> SEQUENCE: 2 61 gacgaattct tangccatca tcttsacsag gac 33 65 <210> SEQ ID NO: 3 66 <211> LENGTH: 36 67 <212> TYPE: DNA 68 <213> ORGANISM: Artificial Sequence 70 <220> FEATURE: 71 <221> NAME/KEY: modified base 73 <222> LOCATION: (24, 25, 29, 30, 34, 35)

RAW SEQUENCE LISTING

74 <223> OTHER INFORMATION: n = i or inosine

RAW SEQUENCE LISTING

DATE: 01/29/2002

PATENT APPLICATION: US/09/939,408A

TIME: 10:50:20

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\I939408A.raw

75 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 76 Primer AAP 78 <400> SEQUENCE: 3 36 79 ggccacgcgt cgactagtac gggnngggnn gggnng 83 <210> SEQ ID NO: 4 84 <211> LENGTH: 33 85 <212> TYPE: DNA 86 <213> ORGANISM: Artificial Sequence 88 <220> FEATURE: 89 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 90 Primer GSP2 92 <400> SEQUENCE: 4 33 egegaattea gaatgeeete gtegteettg ace 93 96 <210> SEQ ID NO: 5 97 <211> LENGTH: 20 98 <212> TYPE: DNA 99 <213> ORGANISM: Artificial Sequence 101 <220> FEATURE: 102 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 103 Primer AUAP 105 <400> SEQUENCE: 5 20 106 ggccacgcgt cgactagtac 109 <210> SEQ ID NO: 6 110 <211> LENGTH: 33 111 <212> TYPE: DNA 112 <213> ORGANISM: Artificial Sequence 114 <220> FEATURE: 115 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 116 Primer GSP4 119 <400> SEQUENCE: 6 33 120 ccggaattcc gacgagccgg aaaggagcgt gcg 123 <210> SEQ ID NO: 7 124 <211> LENGTH: 37 125 <212> TYPE: DNA 126 <213> ORGANISM: Artificial Sequence 128 <220> FEATURE: 129 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 130 Primer AP 132 <400> SEQUENCE: 7 37 ggccacgcgt cgactagtac ttttttttt tttttt 136 <210> SEQ ID NO: 8 137 <211> LENGTH: 24 138 <212> TYPE: DNA 139 <213> ORGANISM: Artificial Sequence 141 <220> FEATURE: 142 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic Primer GSP5

145 <400> SEQUENCE: 8

146 ggtcaaggac gacgagggca ttct

24

RAW SEQUENCE LISTING DATE: 01/29/2002 PATENT APPLICATION: US/09/939,408A TIME: 10:50:20

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\I939408A.raw

```
149 <210> SEQ ID NO: 9
     150 <211> LENGTH: 38
     151 <212> TYPE: DNA
     152 <213> ORGANISM: Artificial Sequence
     154 <220> FEATURE:
     155 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
     156
               Primer GSP6
     159 <400> SEQUENCE: 9
                                                                                38
            ccgggatcca tgatgcacgc ctactcgact ctctcgct
     163 <210> SEQ ID NO: 10
     164 <211> LENGTH: 36
     165 <212> TYPE: DNA
     166 <213> ORGANISM: Artificial Sequence
     168 <220> FEATURE:
     169 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
               Primer OLI 77
     170
     172 <400> SEQUENCE: 10
                                                                                36
           atcgaattcc actctaaccc gtcactagca ctcgcg
     176 <210> SEQ ID NO: 11
     177 <211> LENGTH: 36
     178 <212> TYPE: DNA
     179 <213> ORGANISM: Artificial Sequence
     181 <220> FEATURE:
     182 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
     183
               Primer OLI 78
     185 <400> SEQUENCE: 11
     186
            ateqqatece acqaeacqae gtegaaaage tggtet
                                                                                36
     189 <210> SEQ ID NO: 12
     190 <211> LENGTH: 2419
     191 <212> TYPE: DNA
     192 <213> ORGANISM: Rhodotorula graminis
     194 <220> FEATURE:
     195 <221> NAME/KEY: CDS
     196 <222> LOCATION: (37)..(2196)
W--> 197 <220> FEATURE:
     198 <221> NAME/KEY: modified_base
     199 <222> LOCATION: (494)
     200 <223> OTHER INFORMATION: Other information: y = t or c
W--> 202 <220> FEATURE:
     203 <221> NAME/KEY: unsure
     204 <222> LOCATION: (493)..(495)
     206 <223> OTHER INFORMATION: Other information: Xaa = Val or Ala
     208 <400> SEQUENCE: 12
     209
            ctectgeete actetaacce gteactagea etegeg atg gee eet tee ttg gae
     210
                                                     Met Ala Pro Ser Leu Asp
     211
     213
            tog etc qcc acc acq etc qcc aac qqc ttt acc aac qqc tcq cac qcc
```

Ser Leu Ala Thr Thr Leu Ala Asn Gly Phe Thr Asn Gly Ser His Ala

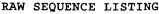
15

20

10

214

215



RAW SEQUENCE LISTING DATE: 01/29/2002 PATENT APPLICATION: US/09/939,408A TIME: 10:50:20

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\I939408A.raw

	217			acc														150
	218 219	Ala	Pro	Thr 25	Lys	ser	Ala	Ala	30	Pro	Thr	ser	Ala	Leu 35	Arg	Arg	Thr	
	221	CCC	aac	ctc	αat	aac	cac	acc		cac	cad	tca	cad		σασ	atc	ata	198
	222			Leu														100
	223	110	40	пец	изр	Gry	1113	45	AIG	1113	OIII	JCI	50	Leu	GIU	110	Val	
	225	a 2 a		ata	ata	200	~ ~ ~		200	~~~	~ a a	at o		~~~	at a	200	~~~	246
		_		ctc		-	_			_	-	_	_			-		240
	227		GIU	Leu	Leu	Ser	-	PIO	THE	ASP	ASP		Val	GIU	Leu	ser	_	
	228	55					60					65					70	004
	230		_	ctc		-	_	-	-	_		-	-	-	_		_	294
	231	Tyr	Ser	Leu	Thr		Arg	Asp	Val	Val	_	Ala	Ala	Arg	Lys	_	Arg	
	232					75					80					85		
	234		_	cgc	-	_		-				_	-	-	-	-	-	342
	235	Arg	Val	Arg	Val	Gln	Asn	Asp	Asp	Glu	Ile	Arg	Ala	Arg	Val	Asp	Lys	
	236				90					95					100			
	238	agc	gtc	gac	ttc	ctc	aag	gcc	cag	ctt	cag	aac	tcg	gtc	tac	gga	gtc	390
	239	Ser	Val	Asp	Phe	Leu	Lys	Ala	Gln	Leu	Gln	Asn	Ser	Val	Tyr	Gly	Val	
	240			105					110					115				
	243	acc	acg	ggt	ttc	ggt	ggc	tcg	gcc	gac	acg	agg	act	gag	gat	gca	gtc	438
	244			Gly														
	245		120	-		-	-	125		-		-	130		-			
	247	agc	ctc	cag	aaσ	aca	ctc	atc	σασ	cac	cag	ctc	tac	aac	ata	acσ	cca	486
	248			Gln														
	249	135			-1-		140					145	-1-	1			150	
	251		tcc	gyc	tca	tcc		age	atc	σσα	cac		ctc	σασ	aac	aca		534
	2 2 1																	
																		334
Ł	252			Xaa		Ser					Arg					Thr		334
Ŀ	252 253	Thr	Ser	Xaa	Ser	Ser 155	Phe	Ser	Val	Gly	Arg 160	Gly	Leu	Glu	Asn	Thr 165	Leu	
•	252 253 255	Thr ccg	<pre>Ser ctc</pre>	Xaa gag	Ser gtc	Ser 155 gtc	Phe cgc	Ser	Val gcc	Gly atg	Arg 160 gtc	Gly atc	Leu cgc	Glu gtc	Asn aac	Thr 165 tcg	Leu ctc	582
•	252 253 255 256	Thr ccg	<pre>Ser ctc</pre>	Xaa	ser gtc Val	Ser 155 gtc	Phe cgc	Ser	Val gcc	Gly atg Met	Arg 160 gtc	Gly atc	Leu cgc	Glu gtc	Asn aac Asn	Thr 165 tcg	Leu ctc	
2	252 253 255 256 257	Thr ccg Pro	Ser ctc Leu	Xaa gag Glu	ser gtc Val 170	Ser 155 gtc Val	Phe cgc Arg	Ser ggc Gly	Val gcc Ala	Gly atg Met 175	Arg 160 gtc Val	Gly atc Ile	Leu cgc Arg	Glu gtc Val	Asn aac Asn 180	Thr 165 tcg Ser	Leu ctc Leu	582
•	252 253 255 256 257 259	Thr ccg Pro	ser ctc Leu cgt	<pre>xaa gag Glu ggc</pre>	ser gtc Val 170 cac	Ser 155 gtc Val tcg	Phe cgc Arg gcc	ser ggc Gly gtc	val gcc Ala cgc	Gly atg Met 175 ctc	Arg 160 gtc Val gtc	Gly atc Ile gtc	Leu cgc Arg	<pre>Glu gtc Val gag</pre>	Asn aac Asn 180 gcg	Thr 165 tcg Ser	ctc Leu acc	
E	252 253 255 256 257 259 260	Thr ccg Pro	ser ctc Leu cgt	<pre>xaa gag Glu ggc Gly</pre>	ser gtc Val 170 cac	Ser 155 gtc Val tcg	Phe cgc Arg gcc	ser ggc Gly gtc	val gcc Ala cgc Arg	Gly atg Met 175 ctc	Arg 160 gtc Val gtc	Gly atc Ile gtc	Leu cgc Arg	Glu gtc Val gag Glu	Asn aac Asn 180 gcg	Thr 165 tcg Ser	ctc Leu acc	582
•	252 253 255 256 257 259 260 261	Thr ccg Pro acg Thr	ser ctc Leu cgt Arg	<pre>xaa gag Glu ggc Gly 185</pre>	gtc Val 170 cac His	Ser 155 gtc Val tcg Ser	Phe cgc Arg gcc Ala	ggc Gly gtc Val	yal gcc Ala cgc Arg 190	Gly atg Met 175 ctc Leu	Arg 160 gtc Val gtc Val	Gly atc Ile gtc Val	cgc Arg ctt Leu	gtc Val gag Glu 195	aac Asn 180 gcg Ala	Thr 165 tcg Ser ctc Leu	ctc Leu acc Thr	582 630
•	252 253 255 256 257 259 260 261 263	Thr ccg Pro acg Thr	ser ctc Leu cgt Arg	<pre>Xaa gag Glu ggc Gly 185 ttg</pre>	gtc Val 170 cac His	ser 155 gtc Val tcg ser cac	Phe cgc Arg gcc Ala cgc	ser ggc Gly gtc Val atc	yal gcc Ala cgc Arg 190 acg	atg Met 175 ctc Leu	Arg 160 gtc Val gtc Val atc	Gly atc Ile gtc Val gtc	cgc Arg ctt Leu ccc	gtc Val gag Glu 195 ctc	Asn aac Asn 180 gcg Ala	Thr 165 tcg Ser ctc Leu	ctc Leu acc Thr	582
	252 253 255 256 257 259 260 261 263 264	Thr ccg Pro acg Thr	ser ctc Leu cgt Arg ttc Phe	<pre>xaa gag Glu ggc Gly 185</pre>	gtc Val 170 cac His	ser 155 gtc Val tcg ser cac	Phe cgc Arg gcc Ala cgc	ggc Gly gtc Val atc Ile	yal gcc Ala cgc Arg 190 acg	atg Met 175 ctc Leu	Arg 160 gtc Val gtc Val atc	Gly atc Ile gtc Val gtc	cgc Arg ctt Leu ccc Pro	gtc Val gag Glu 195 ctc	Asn aac Asn 180 gcg Ala	Thr 165 tcg Ser ctc Leu	ctc Leu acc Thr	582 630
	252 253 255 256 257 259 260 261 263 264 265	Thr ccg Pro acg Thr aac Asn	ctc Leu cgt Arg ttc Phe 200	yaa Glu ggc Gly 185 ttg Leu	gtc Val 170 cac His aac	Ser 155 gtc Val tcg ser cac His	cgc Arg gcc Ala cgc Arg	ggc Gly gtc Val atc Ile 205	yal gcc Ala cgc Arg 190 acg Thr	atg Met 175 ctc Leu ccc Pro	Arg 160 gtc Val gtc Val atc Ile	atc Ile gtc Val gtc	cgc Arg ctt Leu ccc Pro 210	gtc Val gag Glu 195 ctc Leu	aac Asn 180 gcg Ala cgc	Thr 165 tcg Ser ctc Leu ggc Gly	ctc Leu acc Thr tcc Ser	582 630 678
•	252 253 255 256 257 259 260 261 263 264 265 267	ccg Pro acg Thr aac Asn	ctc Leu cgt Arg ttc Phe 200 tcg	yaa gag Glu ggc Gly 185 ttg Leu	gtc Val 170 cac His aac Asn	ser 155 gtc Val tcg ser cac His	cgc Arg gcc Ala cgc Arg	ggc Gly gtc Val atc Ile 205 ctc	yal gcc Ala cgc Arg 190 acg Thr	atg Met 175 ctc Leu ccc Pro	Arg 160 gtc Val gtc Val atc Ile	atc Ile gtc Val gtc Val tcg	cgc Arg ctt Leu ccc Pro 210 tac	gtc Val gag Glu 195 ctc Leu atc	aac Asn 180 gcg Ala cgc Arg	Thr 165 tcg ser ctc Leu ggc Gly	ctc Leu acc Thr tcc Ser	582 630
	252 253 255 256 257 259 260 261 263 264 265 267 268	Thr ccg Pro acg Thr aac Asn atc Ile	ctc Leu cgt Arg ttc Phe 200 tcg	yaa Glu ggc Gly 185 ttg Leu	gtc Val 170 cac His aac Asn	ser 155 gtc Val tcg ser cac His	cgc Arg gcc Ala cgc Arg	ggc Gly gtc Val atc Ile 205 ctc	yal gcc Ala cgc Arg 190 acg Thr	atg Met 175 ctc Leu ccc Pro	Arg 160 gtc Val gtc Val atc Ile	atc Ile gtc Val gtc Val tcg ser	cgc Arg ctt Leu ccc Pro 210 tac	gtc Val gag Glu 195 ctc Leu atc	aac Asn 180 gcg Ala cgc Arg	Thr 165 tcg ser ctc Leu ggc Gly	ctc Leu acc Thr tcc ser gcc Ala	582 630 678
	252 253 255 256 257 259 260 261 263 264 265 267 268 269	Thr ccg Pro acg Thr aac Asn atc Ile 215	ctc Leu cgt Arg ttc Phe 200 tcg ser	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala	gtc Val 170 cac His aac Asn tcg ser	ser 155 gtc Val tcg Ser cac His	cgc Arg gcc Ala cgc Arg gac Asp 220	ggc Gly gtc Val atc Ile 205 ctc Leu	yal gcc Ala cgc Arg 190 acg Thr agc ser	atg Met 175 ctc Leu ccc Pro	Arg 160 gtc Val gtc Val atc Ile ctc Leu	atc Ile gtc Val gtc Val tcg ser 225	cgc Arg ctt Leu ccc Pro 210 tac Tyr	gtc Val gag Glu 195 ctc Leu atc Ile	aac Asn 180 gcg Ala cgc Arg	Thr 165 tcg Ser ctc Leu ggc Gly	ctc Leu acc Thr tcc Ser gcc Ala 230	582 630 678 726
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc	ctc Leu cgt Arg ttc Phe 200 tcg ser	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala	gtc Val 170 cac His aac Asn tcg ser	ser 155 gtc Val tcg ser cac His ggc Gly	cgc Arg gcc Ala cgc Arg gac Asp 220 gac	ggc Gly gtc Val atc Ile 205 ctc Leu	yal gcc Ala cgc Arg 190 acg Thr agc ser aag	atg Met 175 ctc Leu ccc Pro cg Pro	Arg 160 gtc Val gtc Val atc Ile ctc Leu	atc Ile gtc Val gtc Val tcg ser 225 gtt	cgc Arg ctt Leu ccc Pro 210 tac Tyr	gtc Val gag Glu 195 ctc Leu atc Ile	aac Asn 180 gcg Ala cgc Arg	Thr 165 tcg Ser ctc Leu ggc Gly ggc Gly	ctc Leu acc Thr tcc Ser gcc Ala 230 acc	582 630 678
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc	ctc Leu cgt Arg ttc Phe 200 tcg ser	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala	gtc Val 170 cac His aac Asn tcg ser	ser 155 gtc Val tcg ser cac His ggc Gly	cgc Arg gcc Ala cgc Arg gac Asp 220 gac	ggc Gly gtc Val atc Ile 205 ctc Leu	yal gcc Ala cgc Arg 190 acg Thr agc ser aag	atg Met 175 ctc Leu ccc Pro cg Pro	Arg 160 gtc Val gtc Val atc Ile ctc Leu	atc Ile gtc Val gtc Val tcg ser 225 gtt	cgc Arg ctt Leu ccc Pro 210 tac Tyr	gtc Val gag Glu 195 ctc Leu atc Ile	aac Asn 180 gcg Ala cgc Arg	Thr 165 tcg Ser ctc Leu ggc Gly ggc Gly	ctc Leu acc Thr tcc Ser gcc Ala 230 acc	582 630 678 726
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc	ctc Leu cgt Arg ttc Phe 200 tcg ser	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala	gtc Val 170 cac His aac Asn tcg ser	ser 155 gtc Val tcg ser cac His ggc Gly	cgc Arg gcc Ala cgc Arg gac Asp 220 gac	ggc Gly gtc Val atc Ile 205 ctc Leu	yal gcc Ala cgc Arg 190 acg Thr agc ser aag	atg Met 175 ctc Leu ccc Pro cg Pro	Arg 160 gtc Val gtc Val atc Ile ctc Leu	atc Ile gtc Val gtc Val tcg ser 225 gtt	cgc Arg ctt Leu ccc Pro 210 tac Tyr	gtc Val gag Glu 195 ctc Leu atc Ile	aac Asn 180 gcg Ala cgc Arg	Thr 165 tcg Ser ctc Leu ggc Gly ggc Gly	ctc Leu acc Thr tcc Ser gcc Ala 230 acc	582 630 678 726
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile	ctc Leu cgt Arg ttc Phe 200 tcg Ser acc Thr	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala	gtc Val 170 cac His aac Asn tcg Ser cac	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235	cgc Arg gcc Ala cgc Arg gac Asp 220 gac Asp	ggc Gly gtc val atc Ile 205 ctc Leu gtc val	yal gcc Ala cgc Arg 190 acg Thr agc ser aag	atg Met 175 ctc Leu ccc Pro ccg Pro	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240	atc Ile gtc Val gtc Val tcg Ser 225 gtt Val	cgc Arg ctt Leu ccc Pro 210 tac Tyr	gtc Val gag Glu 195 ctc Leu atc Ile cac	aac Asn 180 gcg Ala cgc Arg gcc Ala	Thr 165 tcg ser ctc Leu ggc Gly gga Gly 245	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr	582 630 678 726
•	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273 275 276	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile gag	ctc Leu cgt Arg ttc Phe 200 tcg ser acc Thr	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala	gtc Val 170 cac His aac Asn tcg ser cac His	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235 ttt	cgc Arg gcc Ala cgc Arg gac Asp 220 gac Asp	ggc Gly gtc val atc Ile 205 ctc Leu gtc val	yal gcc Ala cgc Arg 190 acg Thr agc ser aag Lys	atg Met 175 ctc Leu ccc Pro ccg Pro	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240 atc	atc Ile gtc Val gtc Val tcg Ser 225 gtt Val tcg	cgc Arg ctt Leu ccc Pro 210 tac Tyr ttg Leu	gtc Val gag Glu 195 ctc Leu atc Ile cac His	aac Asn 180 gcg Ala cgc Arg gcc Ala gag Glu	Thr 165 tcg Ser ctc Leu ggc Gly gga Gly 245 ctc	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr	582 630 678 726
2	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273 275 276 277	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile gag Glu	ctc Leu cgt Arg ttc Phe 200 tcg Ser acc Thr	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala ggt Gly atc	gtc Val 170 cac His aac Asn tcg Ser cac His atg Met 250	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235 ttt Phe	cgc Arg gcc Ala cgc Arg gac Asp 220 gac Asp	ggc Gly gtc Val atc Ile 205 ctc Leu gtc Val cgc Arg	yal gcc Ala cgc Arg 190 acg Thr agc Ser aag Lys gag Glu	atg Met 175 ctc Leu ccc Pro ccg Pro gtt Val gcc Ala 255	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240 atc Ile	atc Ile gtc Val gtc Val tcg Ser Val tcg Ser	cgc Arg ctt Leu ccc Pro 210 tac Tyr ttg Leu ctc Leu	gtc Val gag Glu 195 ctc Leu atc Ile cac His	aac Asn 180 gcg Ala cgc Arg gcc Ala gag Glu ggt Gly 260	Thr 165 tcg Ser ctc Leu ggc Gly gga Gly 245 ctc Leu	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr	582 630 678 726
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273 275 276	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile gag Glu	ctc Leu cgt Arg ttc Phe 200 tcg Ser acc Thr	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala ggt Gly	gtc Val 170 cac His aac Asn tcg Ser cac His atg Met 250	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235 ttt Phe	cgc Arg gcc Ala cgc Arg gac Asp 220 gac Asp	ggc Gly gtc Val atc Ile 205 ctc Leu gtc Val cgc Arg	yal gcc Ala cgc Arg 190 acg Thr agc Ser aag Lys gag Glu	atg Met 175 ctc Leu ccc Pro ccg Pro gtt Val gcc Ala 255	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240 atc Ile	atc Ile gtc Val gtc Val tcg Ser Val tcg Ser	cgc Arg ctt Leu ccc Pro 210 tac Tyr ttg Leu ctc Leu	gtc Val gag Glu 195 ctc Leu atc Ile cac His	aac Asn 180 gcg Ala cgc Arg gcc Ala gag Glu ggt Gly 260	Thr 165 tcg Ser ctc Leu ggc Gly gga Gly 245 ctc Leu	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr	582 630 678 726
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273 275 276 277	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile gag Glu gca	ctc Leu cgt Arg ttc Phe 200 tcg ser acc Thr aag Lys	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala ggt Gly atc	gtc Val 170 cac His aac Asn tcg Ser cac His atg Met 250 ctc	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235 ttt Phe	cgc Arg gcc Ala cgc Arg gac Asp 220 gac Asp	ggc Gly gtc Val atc Ile 205 ctc Leu gtc Val cgc Arg aag	yal gcc Ala cgc Arg 190 acg Thr agc ser agg Lys gag Glu gag	atg Met 175 ctc Leu ccc Pro ccg Pro gtt Val gcc Ala 255 ggt	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240 atc Ile ctc	atc Ile gtc Val gtc Val tcg ser yal tcg ser ggt	cgc Arg ctt Leu ccc Pro 210 tac Tyr ttg Leu ctc Leu ctg	gtc Val gag Glu 195 ctc Leu atc Ile cac His ttt Phe	aac Asn 180 gcg Ala cgc Arg gcc Ala gag Glu ggt Gly 260 aac	Thr 165 tcg Ser ctc Leu ggc Gly gga Gly 245 ctc Leu	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr gag Glu acg	582 630 678 726 774
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273 275 276 277	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile gag Glu gca	ctc Leu cgt Arg ttc Phe 200 tcg ser acc Thr aag Lys	yaa gag Glu ggc Gly 185 ttg Leu gcg Ala ggt Gly atc Ile	gtc Val 170 cac His aac Asn tcg Ser cac His atg Met 250 ctc	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235 ttt Phe	cgc Arg gcc Ala cgc Arg gac Asp 220 gac Asp	ggc Gly gtc Val atc Ile 205 ctc Leu gtc Val cgc Arg aag	yal gcc Ala cgc Arg 190 acg Thr agc ser agg Lys gag Glu gag	atg Met 175 ctc Leu ccc Pro ccg Pro gtt Val gcc Ala 255 ggt	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240 atc Ile ctc	atc Ile gtc Val gtc Val tcg ser yal tcg ser ggt	cgc Arg ctt Leu ccc Pro 210 tac Tyr ttg Leu ctc Leu ctg	gtc Val gag Glu 195 ctc Leu atc Ile cac His ttt Phe	aac Asn 180 gcg Ala cgc Arg gcc Ala gag Glu ggt Gly 260 aac	Thr 165 tcg Ser ctc Leu ggc Gly gga Gly 245 ctc Leu	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr gag Glu acg	582 630 678 726 774
	252 253 255 256 257 259 260 261 263 264 265 267 268 269 271 272 273 275 276 277 279 280	Thr ccg Pro acg Thr aac Asn atc Ile 215 atc Ile gag Glu gca Ala	ctc Leu cgt Arg ttc Phe 200 tcg Ser acc Thr aag Lys	gag Glu ggc Gly 185 ttg Leu gcg Ala ggt Gly atc Ile	gtc Val 170 cac His aac Asn tcg Ser cac His atg Met 250 ctc Leu	ser 155 gtc Val tcg ser cac His ggc Gly ccc Pro 235 ttt Phe	cgc Arg gcc Arg gac Asp 220 gac Asp gcg Ala ccg Pro	ggc Gly gtc Val atc Ile 205 ctc Leu gtc Val cgc Arg aag Lys	yal gcc Ala cgc Arg 190 acg Thr agc ser agg Lys gag Glu gag Glu 270	atg Met 175 ctc Leu ccc Pro ccg Pro gtt Val gcc Ala 255 ggt Gly	Arg 160 gtc Val gtc Val atc Ile ctc Leu cac His 240 atc Ile ctc Leu	atc Ile gtc Val gtc Val tcg ser 225 gtt Val tcg ser ggt Gly	cgc Arg ctt Leu ccc Pro 210 tac Tyr ttg Leu ctc Leu ctg Leu	gtc Val gag Glu 195 ctc Leu atc Ile cac His ttt Phe gtc Val 275	aac Asn 180 gcg Ala cgc Arg gcc Ala gag Glu ggt Gly 260 aac Asn	Thr 165 tcg Ser ctc Leu ggc Gly gga Gly 245 ctc Leu	ctc Leu acc Thr tcc Ser gcc Ala 230 acc Thr gag Glu acg Thr	582 630 678 726 774



RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/939,408A T

DATE: 01/29/2002 TIME: 10:50:20

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\I939408A.raw

284	Δla	Val	Ser	Δla	Ser	Met	Δla	Thr	T.eu	Ser	T.eu	His	Asp	Ser	His	Met	
285	mia	280	DCI	ma	DCI	1100	285	1111	пса	oci	Lea	290	p	Der	1110	1100	
287	ctc	tcg	ctc	ctc	tcg	cag	gcc	ttg	acg	gct	ctc	acg	gtg	gag	gcc	atg	966
288	Leu	Ser	Leu	Leu	Ser	Gln	Ala	Leu	Thr	Ala	Leu	Thr	Val	Glu	Ala	Met	
289	295					300					305					310	
291								gcg									1014
292	Val	Gly	Gln	Gln	Gly	Ser	Phe	Ala	Pro	Phe	Ile	His	Asp	Val	Cys	Arg	
293					315					320					325		
295	ccg	cac	ccc	ggc	cag	gtc	gag	gtc	gcg	cgc	aac	atc	cgc	acg	ctc	ctt	1062
297	Pro	His	Pro	Gly	Gln	Val	Glu	Val	Ala	Arg	Asn	Ile	Arg	Thr	Leu	Leu	
298				330					335					340			
300	tcc	ggc	tcg	tcg	ttt	gcc	gtt	gag	cac	gag	gag	gag	gtc	aag	gtc	aag	1110
301	Ser	Gly	Ser	Ser	Phe	Ala	Val	Glu	His	Glu	Glu	Glu	Val	Lys	Val	Lys	
302			345					350					355				
304	gac	gac	gag	ggc	att	ctt	cgc	cag	gac	cgc	tac	ccg	ctc	cgc	acg	tcg	1158
305	Asp	Asp	Glu	Gly	Ile	Leu	Arg	Gln	Asp	Arg	Tyr	Pro	Leu	Arg	Thr	Ser	
306		360					365					370					
308	cct	cag	ttc	ctc	ggc	ccg	ctc	gtg	gag	gac	atg	atg	cac	gcc	tac	tcg	1206
309								Val									
310	375				_	380				_	385					390	
312	act	ctc	tcg	ctc	gag	aac	aac	acg	acg	acc	gac	aac	ccg	ctc	ctc	gac	1254
314	Thr	Leu	Ser	Leu	Glu	Asn	Asn	Thr	Thr	Thr	Asp	Asn	Pro	Leu	Leu	Asp	
315					395					400	_				405	_	
317	gtc	gag	aac	aag	cag	acc	gcg	cac	ggc	ggc	aac	ttc	cag	gcg	tcg	gct	1302
318	-			-	_			His									
319				410					415	_				420			
321	gtc	tcg	att	tcg	atg	gag	aag	acc	agg	ctc	gca	ctc	gcc	ctc	atc	ggc	1350
322								Thr									
323			425				-	430	_				435			_	
325	aaq	ctc	aac	ttc	acq	cag	tgc	acc	gag	ttg	ctc	aac	gct	gcc	atg	aac	1398
326	_				_	_	_	Thr		_			_	_	_		
327	-	440					445					450					
329	cqc	ggc	ctg	cct	tcg	tgc	ctc	gct	qcc	gag	gac	ccq	tcg	ctc	aac	tat	1446
330								Āla									
331	455	_				460					465					470	
333	cac	qqc	aaq	ggc	ttg	gac	att	cac	atc	gct	gct	tac	gct	tcg	gag	ctc	1494
334								His									
335		_	-	_	475	_				480					485		
337	ggc	cac	ctt	gcc	aac	ccg	gtc	act	acc	ttc	gtc	cag	ccc	gca	gag	atg	1542
338																Met	
339	_			490					495					500			
341	ggc	aac	cag	gcc	gtc	aac	tcg	ctc	gct	ctc	atc	tcc	gcg	cgc	cgc	act	1590
342								Leu									
343	_		505					510					515		_		
345	gcc	gag	gcc	aac	gac	gtc	ctt	tct	ctc	ctt	ctc	gcc	tcg	cac	ctg	tac	1638
346								Ser									
347		520			_		525					530				_	
349	tgc	acg	ctc	cag	gcc	gtc	gac	ctc	cgc	gcg	atg	gag	ctc	gac	ttc	aag	1686
350	Cys	Thr	Leu	Gln	Ala	Val	Asp	Leu	Arg	Ala	Met	Glu	Leu	Asp	Phe	Lys	
	-						-		-					-		_	

man services

VERIFICATION SUMMARY

L:61 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2

PATENT APPLICATION: US/09/939,408A

DATE: 01/29/2002 TIME: 10:50:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\I939408A.raw

```
L:79 \ M:341 \ W: (46) \ "n" \ or "Xaa" \ used, for SEQ ID#:3
L:197 M:283 W: Missing Blank Line separator, <220> field identifier
L:252 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:416 M:283 W: Missing Blank Line separator, <400> field identifier
L:444 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:1622 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1624 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1626 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1628\ M:341\ W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1630 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1632 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1634 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1636 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1638 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1640 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1644 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1646 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1648 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1652 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1654 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1656 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1660 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1662 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1664 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1666 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1668 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1670 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1672 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1674 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1676 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1678 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1680 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1682 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1684 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1686 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1688 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1692 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1694 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1696 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1698 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1702 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1704 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:1721 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:1724 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:1727 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:1730 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/939,408A

DATE: 01/29/2002 TIME: 10:50:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\1939408A.raw

```
L:1733 \text{ M}:341 \text{ W}: (46) \text{ "n" or "Xaa" used, for SEQ ID}\#:21
L:1736 \text{ M}:341 \text{ W}: (46) \text{ "n" or "Xaa" used, for SEQ ID}\#:21
L:1739 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:1742 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21
L:1907 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:26
L:1908 M:283 W: Missing Blank Line separator, <220> field identifier
L:1910 M:283 W: Missing Blank Line separator, <400> field identifier
L:1915 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:27
L:1916 M:283 W: Missing Blank Line separator, <220> field identifier
L:1918 M:283 W: Missing Blank Line separator, <400> field identifier
L:1924 M:283 W: Missing Blank Line separator, <220> field identifier
L:1928 M:283 W: Missing Blank Line separator, <220> field identifier
L:1932 M:283 W: Missing Blank Line separator, <220> field identifier
L:1936 M:283 W: Missing Blank Line separator, <220> field identifier
L:1940 M:283 W: Missing Blank Line separator, <220> field identifier
L:1944 M:283 W: Missing Blank Line separator, <220> field identifier
L:1948 M:283 W: Missing Blank Line separator, <220> field identifier
L:1952 M:283 W: Missing Blank Line separator, <220> field identifier
L:1956 M:283 W: Missing Blank Line separator, <220> field identifier
L:1960 M:283 W: Missing Blank Line separator, <220> field identifier
L:1964 M:283 W: Missing Blank Line separator, <220> field identifier
L:1968 M:283 W: Missing Blank Line separator, <220> field identifier
L:1972 M:283 W: Missing Blank Line separator, <220> field identifier
L:1976 M:283 W: Missing Blank Line separator, <220> field identifier
L:1980 M:283 W: Missing Blank Line separator, <220> field identifier
L:1984 M:283 W: Missing Blank Line separator, <400> field identifier
L:2042 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:28
L:2150 M:283 W: Missing Blank Line separator, <220> field identifier
L:2153 M:283 W: Missing Blank Line separator, <220> field identifier
L:2157 M:283 W: Missing Blank Line separator, <400> field identifier
L:2298 M:283 W: Missing Blank Line separator, <220> field identifier
L:2301 M:283 W: Missing Blank Line separator, <220> field identifier
L:2305 M:283 W: Missing Blank Line separator, <220> field identifier
L:2309 M:283 W: Missing Blank Line separator, <220> field identifier
L:2313 M:283 W: Missing Blank Line separator, <220> field identifier
L:2317 M:283 W: Missing Blank Line separator, <220> field identifier
L:2321 M:283 W: Missing Blank Line separator, <220> field identifier L:2325 M:283 W: Missing Blank Line separator, <220> field identifier
L:2329 M:283 W: Missing Blank Line separator, <220> field identifier
L:2333 M:283 W: Missing Blank Line separator, <220> field identifier
L:2337 M:283 W: Missing Blank Line separator, <220> field identifier
L:2341 M:283 W: Missing Blank Line separator, <220> field identifier
L:2345 M:283 W: Missing Blank Line separator, <220> field identifier
L:2349 M:283 W: Missing Blank Line separator, <220> field identifier
L:2353 M:283 W: Missing Blank Line separator, <220> field identifier
L:2357 M:283 W: Missing Blank Line separator, <220> field identifier L:2361 M:283 W: Missing Blank Line separator, <220> field identifier
L:2365 M:283 W: Missing Blank Line separator, <220> field identifier
L:2369 M:283 W: Missing Blank Line separator, <220> field identifier
```

VERIFICATION SUMMARYDATE: 01/29/2002PATENT APPLICATION:US/09/939,408ATIME: 10:50:21

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\01292002\1939408A.raw

L:2	373	M:283	W:	Missing	Blank	Line	separator,	<220>	field	identifier
L:2	377	M:283	W:	Missing	Blank	Line	separator,	<220>	field	identifier
L:2	381	M:283	W:	Missing	Blank	Line	separator,	<220>	field	identifier
L:2	385	M:283	W:	Missing	Blank	Line	separator,	<220>	field	identifier
L:2	389	M:283	W:	Missing	Blank	Line	separator,	<220>	field	identifier
L:2	393	M:283	W:	Missing	Blank	Line	separator,	<220>	field	identifier